

CITY OF BELLEVUE (PWS 5070004)
SOURCE WATER ASSESSMENT FINAL REPORT

October 5, 2000



State of Idaho
Department of Environmental Quality

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Executive Summary

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency to assess every source of public drinking water for its relative sensitivity to contaminants regulated by the Act. This assessment is based on a land use inventory of the designated assessment area and sensitivity factors associated with the wells and aquifer characteristics.

This report, *Source Water Assessment for the City of Bellevue, Idaho*, describes the public drinking water system, the boundaries of the zones of water contribution, and the associated potential contaminant sources located within these boundaries. This assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. **The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.**

The City of Bellevue drinking water system consists of two wells and three springs. Total coliform bacteria was detected in the water sampling efforts of October 1993, April through June 1994 (12 detections), August and October 1995 (10 detections), and September 1998 (City Hall). The delineation capture zones also include local mining operations, an underground storage tank, the old dump, a land application site, an airport, and nine local businesses. The Chantrelle Well delineation is contained within the 100-year floodplain of the Big Wood River. In January 1990, one of the springs recorded the detection of the volatile organic contaminant dichlormethane.

This assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

For the City of Bellevue, source water protection activities should focus on implementation of practices aimed at reducing the movement of microbial contamination within the designated source water areas and keeping the distribution system free of microbial contaminants. The City of Bellevue water system should also be aware of potential risks due to inorganic contaminants from the nearby mining operations. Each of the wellheads should be protected from surface flooding because the 100-year floodplains of the Big Wood River, Slaughterhouse Creek, and Seamans Creek cross the delineated areas. Six local businesses and a sewer plant discharge line are within the 0-3 year time of travel zone for the Chantrelle Well and should be carefully monitored. Though numerous steps have been taken to protect the springs from contamination, the cause of the volatile organic detection in the spring source should be identified and eliminated. Some of the designated areas are outside the direct jurisdiction of the City of Bellevue. Partnerships with state and local agencies and industry groups should be established and are critical to success. Due to the time involved with the movement of groundwater, source water protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. Source water protection activities for agriculture should be coordinated with the Idaho State Department of Agriculture, the Soil Conservation Commission and local Soil Conservation District, and the Natural Resources Conservation Service.

A community with a fully developed source water protection program will incorporate many strategies. For assistance in developing protection strategies please contact the Twin Falls Regional Office of the Idaho Department of Environmental Quality or the Idaho Rural Water Association.

SOURCE WATER ASSESSMENT FOR CITY OF BELLEVUE, IDAHO

Section 1. Introduction - Basis for Assessment

The following sections contain information necessary to understand how and why this assessment was conducted. **It is important to review this information to understand what the ranking of this source means.** A map showing the delineated source water assessment area and the inventory of significant potential sources of contamination identified within that area are attached. The list of significant potential contaminant source categories and their rankings used to develop the assessment also is attached.

Background

Under the Safe Drinking Water Act Amendments of 1996, all states are required by the U.S. Environmental Protection Agency (EPA) to assess every source of public drinking water for its relative susceptibility to contaminants regulated by the Safe Drinking Water Act. This assessment is based on a land use inventory of the delineated assessment area and sensitivity factors associated with the wells and aquifer characteristics.

Level of Accuracy and Purpose of the Assessment

Since there are over 2,900 public water sources in Idaho, there is limited time and resources to accomplish the assessments. All assessments must be completed by May of 2003. An in-depth, site-specific investigation of each significant potential source of contamination is not possible. **Therefore, this assessment should be used as a planning tool, taken into account with local knowledge and concerns, to develop and implement appropriate protection measures for this source. The results should not be used as an absolute measure of risk and they should not be used to undermine public confidence in the water system.**

The ultimate goal of the assessment is to provide data to local communities to develop a protection strategy for their drinking water supply system. The Idaho Department of Environmental Quality (IDEQ) recognizes that pollution prevention activities generally require less time and money to implement than treatment of a public water supply system once it has been contaminated. IDEQ encourages communities to balance resource protection with economic growth and development. The decision as to the amount and types of information necessary to develop a source water protection program should be determined by the local community based on its own needs and limitations. Wellhead or source water protection is one facet of a comprehensive growth plan, and it can complement ongoing local planning efforts.

Section 2. Conducting the Assessment

General Description of the Source Water Quality

The City of Bellevue is a community of approximately 1265 people with 540 connections, located in Blaine County, south of the City of Hailey, near the confluence of Slaughterhouse Creek and Big Wood River (Figure 1). The public drinking water system for City of Bellevue is comprised of two wells and three springs.

The primary water quality issue currently facing City of Bellevue is that of microbial contamination, possible inorganic chemical (IOC) contamination from the local mining operations, and possible volatile organic chemical (VOC) contamination from various sources and the problems associated with managing this contamination. In recent years, total coliform has been detected at various sampling locations in the Bellevue area including the well house, City Hall, City Shop, General Store, and others.

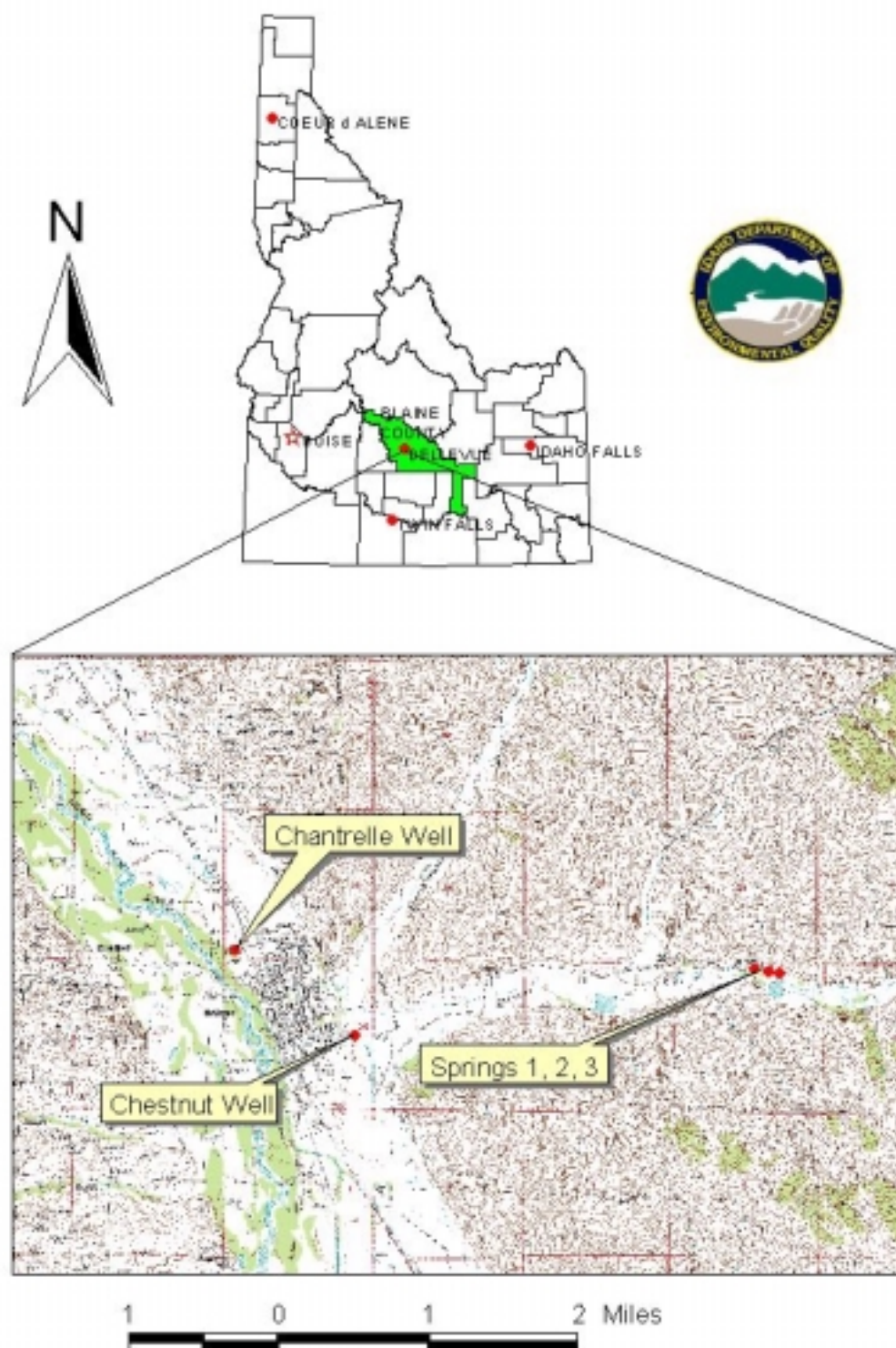
Defining the Zones of Contribution--Delineation

The delineation process establishes the physical area around a well that will become the focal point of the assessment. The process includes mapping the boundaries of the zone of contribution into time of travel zones (zones indicating the number of years necessary for a particle of water to reach a well) for water in the aquifer. IDEQ used a refined computer model approved by the EPA in determining the 3-year (Zone 1B), 6-year (Zone 2), and 10-year (Zone 3) time of travel for water associated with the Big Wood River aquifer in the vicinity of the City of Bellevue. The computer model used site specific data, assimilated by IDEQ from a variety of sources including the City of Bellevue well logs and other local well logs. There are three separate delineated source water assessment areas for the City of Bellevue. The Chantrelle Well delineation can best be described as a corridor 1 mile wide and 2 miles long extending north-northwest to the Hailey Friedman Memorial Airport. The Chestnut Well delineation extends to the northwest along the edge of the Big Wood River valley, to the northeast along Slaughterhouse Creek and to the east-northeast along the Seamans Creek. The three spring sources have the same delineation encompassing the watershed from which they draw water. The actual data used by IDEQ in determining the source water assessment delineation area is available upon request.

Identifying Potential Sources of Contamination

A potential source of contamination is defined as any facility or activity that stores, uses, or produces, as a product or by-product, the contaminants regulated under the Safe Drinking Water Act and has a sufficient likelihood of releasing such contaminants at levels that could pose a concern relative to drinking water sources. The goal of the inventory process is to locate and describe those facilities, land uses, and environmental conditions that are potential sources of groundwater contamination. The locations of potential sources of contamination within the delineation areas were obtained by field surveys conducted by IDEQ and from available databases.

Figure 1. Geographic Location of City of Bellevue Wells and Springs



The dominant land use outside the City of Bellevue is irrigated agricultural land, residential uses, and inactive mining operations. Land use within the immediate area of 1) the Chantrelle wellhead consists of commercial and urban uses, 2) the Chestnut Well consists of residential and urban uses, and 3) the three spring sources consists of rangeland and undeveloped mountainous country.

It is important to understand that a release may never occur from a potential source of contamination provided they are using best management practices. Many potential sources of contamination are regulated at the federal level, state level, or both to reduce the risk of release. Therefore, when a business, facility, or property is identified as a potential contaminant source, this should not be interpreted to mean that this business, facility, or property is in violation of any local, state, or federal environmental law or regulation. What it does mean is that the potential for contamination exists due to the nature of the business, industry, or operation. There are a number of methods that water systems can use to work cooperatively with potential sources of contamination. These involve educational visits and inspections of stored materials. Many owners of such facilities may not even be aware that they are located near a public water supply well.

Contaminant Source Inventory Process

A two-phased contaminant inventory of the study area was conducted during the spring and summer of 2000. The first phase involved identifying and documenting potential contaminant sources within the City of Bellevue Source Water Assessment Area through the use of computer databases and Geographic Information System (GIS) maps developed by IDEQ. The second or enhanced phase of the contaminant inventory involved contacting the operator to validate the sources identified in phase one and to add any additional potential sources in the area. This task was undertaken with the assistance of Rick Turner of the City of Bellevue and John Bokor of Idaho Rural Water Association.

The Chantrelle Well has a total of eight potential contaminant sites within the delineated source water areas. The Chestnut Well has six sources (see Table 1). The watershed delineation of the three springs contains no potential contaminant sites (Figure 3). The business-related potential contaminant sources within delineated source water areas are located along Main Street and downtown. The mining sources are located in the surrounding hills and mountains. Potential contaminant sources located in the delineated source water area include an inactive silver and gold mine, a municipal wastewater discharge into the Big Wood River, an aviation fuel storage facility, a construction contractor, a tile and ceramic contractor, an aircraft charter rental business, an airport, a land application site, an old dump, two automobile businesses, two animal-related businesses, a grocery store, and a steam cleaning shop. There is also a light industrial area just north-northwest of W-6 (Figure 2). Since the groundwater aquifer is hydraulically connected to the surface water system (Luttrell and Brockway, 1984), the Big Wood River and other streams that cross the delineations will be considered potential sources of microbial contamination. The City of Bellevue should be aware of three nearby mining sources that are not within the delineated areas but could contribute lead, silver, copper, zinc, and gold mining waste products to the area.

**Figure 2. City of Bellevue Chantrelle Well (C-#) & Chestnut Well (W-#)
Delineations and Potential Contaminant Locations**

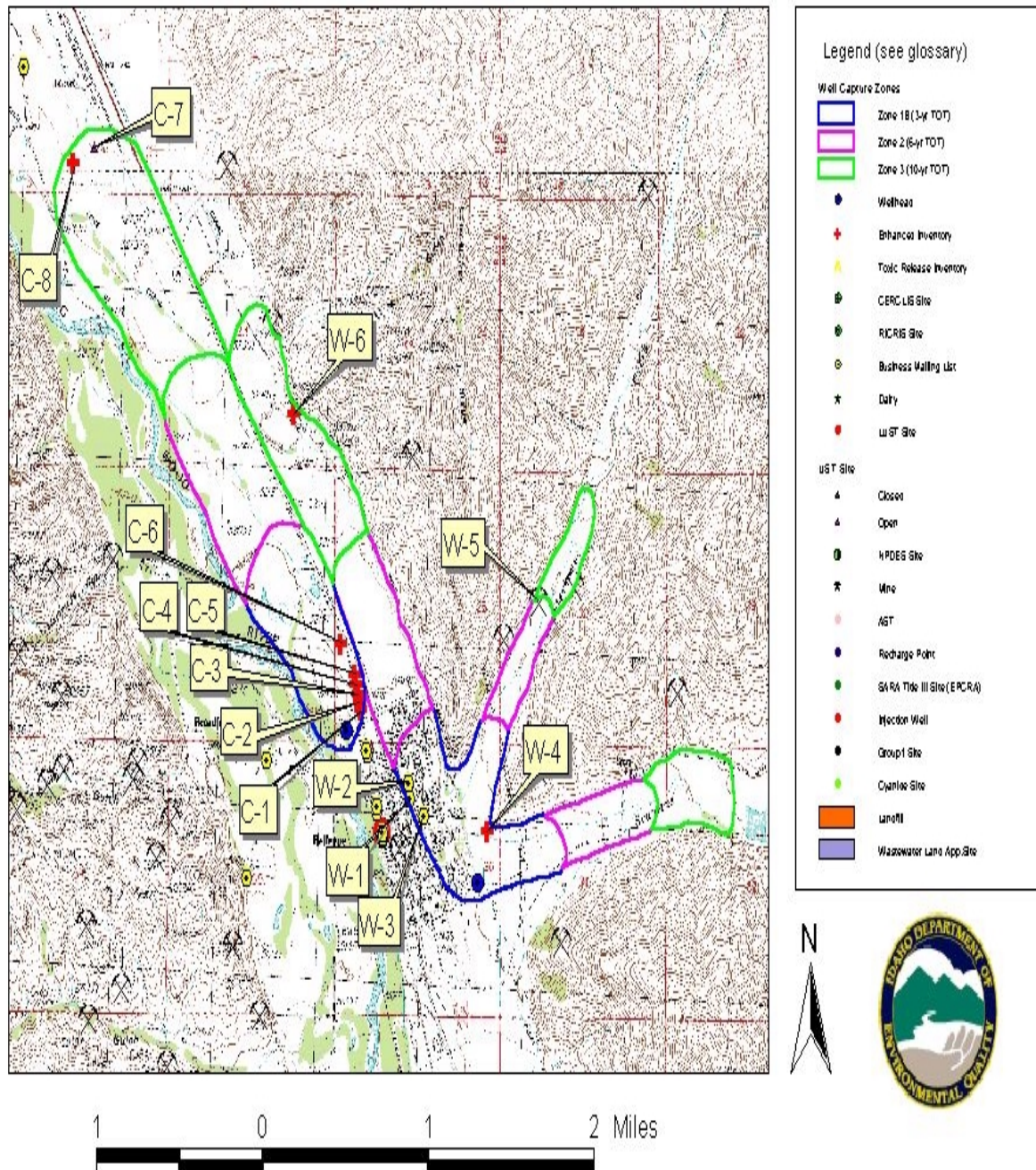


Figure 3. City of Bellevue Spring Delineations and Potential Contaminant Locations

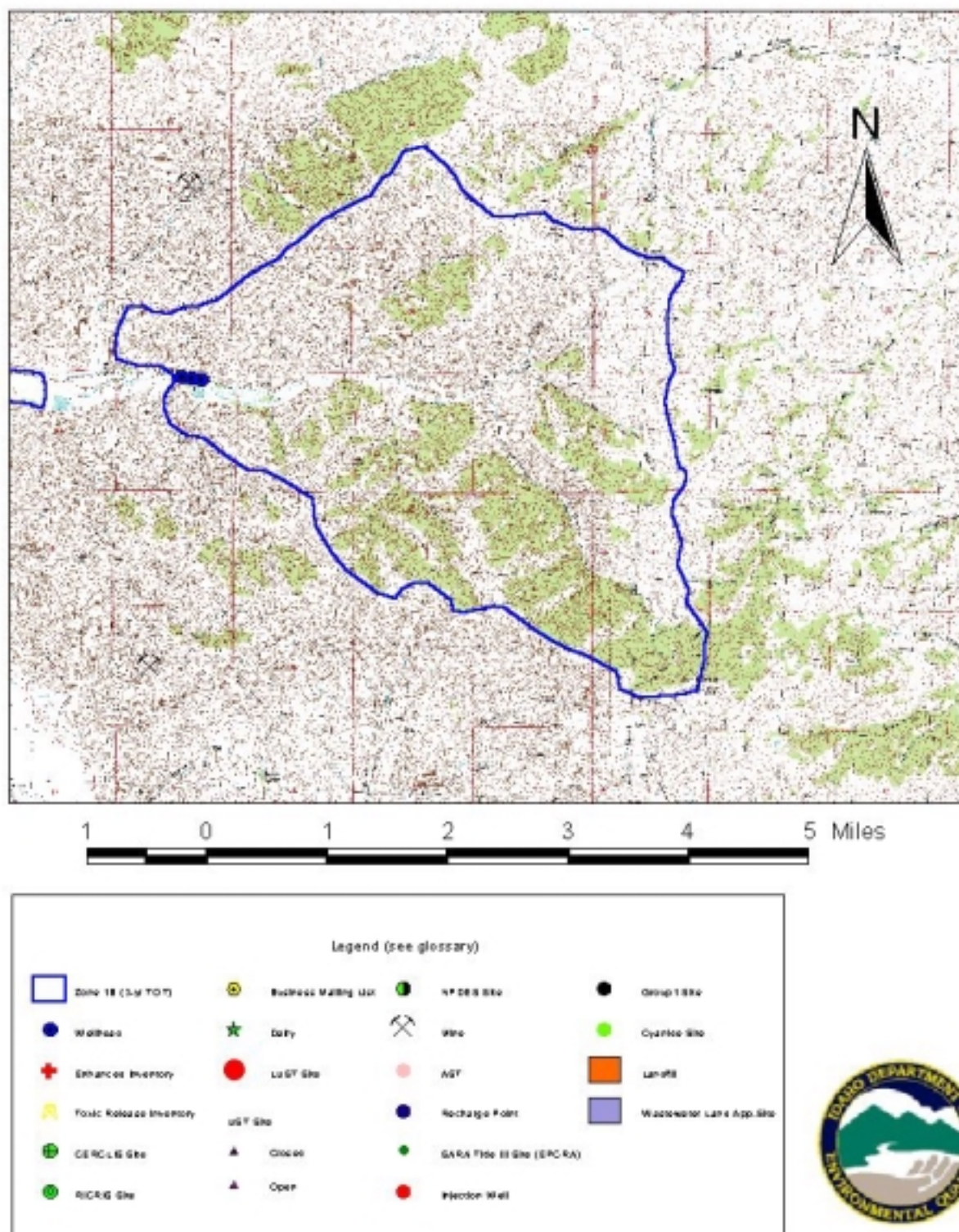


Table 1. City of Bellevue, Potential Contaminant Inventory

SITE #	Source Description	TOT Zone (years)	Source of Information	Potential Contaminants
C-1	Animal Clinic	0-3	Enhanced Inventory	IOC
C-2	Equine Center	0-3	Enhanced Inventory	IOC
C-3	Auto Body Shop	0-3	Enhanced Inventory	VOC, SOC
C-4	Auto Repair Shop	0-3	Enhanced Inventory	VOC, SOC
C-5	Steam Cleaning	0-3	Enhanced Inventory	VOC
C-6	Grocery Store	0-3	Enhanced Inventory	IOC, VOC, SOC
C-7	UST Site	6-10	Database Search	VOC, SOC
C-8	Airport	6-10	Enhanced Inventory	VOC, SOC
C-9	Big Wood River	0-3	Database Search	Microbes
W-1	Tile & Ceramic Contractors	0-3	Database Search	VOC, SOC
W-2	Construction Contractor	0-3	Database Search	VOC, SOC
W-3	Aircraft Charter Rental	0-3	Database Search	VOC
W-4	Old Dump	0-3	Enhanced Inventory	VOC, SOC, IOC
W-5	Silver & Gold Mine	3-6	Database Search	IOC
W-6	Land Application Site	6-10	Enhanced Inventory	IOC

IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical
C-# = source related to the Chantrelle Well, W-# = source related to the Chestnut Well

Section 3. Susceptibility Analyses

Significant potential sources of contamination were ranked as high, moderate, or low risk according to the following considerations: hydrologic characteristics, physical integrity of the well, land use characteristics, and potentially significant contaminant sources. The susceptibility rankings are specific to a particular potential contaminant or category of contaminants. Therefore, a high susceptibility rating relative to one potential contaminant does not mean that the water system is at the same risk for all other potential contaminants. The relative ranking that is derived for each well is a qualitative, screening-level step that, in many cases, uses generalized assumptions and best professional judgement. The following summaries describe the rationale for the susceptibility ranking.

Hydrologic Sensitivity

Hydrologic sensitivity was moderate for the Chantrelle Well and for the Chestnut Well. The three spring sources rated as moderate because of the nature of the soils in the area (see Table 2). For the wells in the city, the soils in the Chantrelle Well delineation are considered to be well drained, whereas the Chestnut Well has poorly to moderately drained soils. Both have predominantly gravel vadose zones (zone from land surface to the water table). Retarding contaminant movement downward is greater than 50 feet of low permeability zones in the Chantrelle Well. There is no information as to whether the Chestnut Well has the required 50 feet of low permeability units. The spring sources rated as moderate because the soils are predominantly in the poor to moderate drainage class. There is a lack of further information regarding the spring sources.

Well Construction

Well construction directly affects the ability of the wells to protect the aquifer from contaminants. The City of Bellevue drinking water system consists of two wells and three springs that extract groundwater for domestic and commercial uses. Well system construction scores were moderate for the Chantrelle Well, the Chestnut Well, and the three spring sources (Table 2). Though no well logs were available for the Chestnut Well or the three spring sources, a Sanitary Survey completed in 1997 showed that the wellhead and sanitary seal were in compliance.

The Chantrelle Well has a total depth of 255 feet below ground surface. The casing extends to 216.5 feet and the annular seal extends to 60 feet and into a low permeability clay layer. The static water level was recorded as 26 feet in December 1995 and the highest production unit occurs from 160 to 215 feet. A 1997 sanitary survey showed that the Chantrelle Well was in compliance with wellhead and surface seal standards. Though these factors lowered the well construction score for the Chantrelle Well, the well was located within the 100-year floodplain and was given an additional point because it does not meet current well construction standards.

The Idaho Department of Water Resources Well Construction Standards Rules (1993) require all public water systems (PWSs) to follow IDEQ standards as well. IDAPA 58.01.08.550 requires that PWSs follow the Recommended Standards for Water Works (1997; previous version 1992) when during construction. Since the Chantrelle Well was constructed in 1995 as a PWS, it should have followed these standards. Table 1 of the Recommended Standards for Water Works (1997) states that 16-inch casing requires a thickness of 0.375 inches, instead of the 0.25-inch thickness that was used.

Based on nearby well logs and previous studies of the area (Castelin and Winner, 1975; Frenzel, 1989; Brickway and Kahlow, 1994), the city wells are most likely completed in the fluvioglacial (river and glacier deposited) sediments, which is comprised of fine to coarse-grained gravels that have considerable quantities of water available for use.

Potential Contaminant Source and Land Use

The Chantrelle Well rated moderate for inorganic chemicals (IOCs) (i.e. nitrate, lead, copper), synthetic organic chemicals (SOCs) (i.e. pesticides), and volatile organic chemicals (VOCs) (i.e. petroleum products), and low for microbial contaminants. The Chestnut Well rated moderate for IOCs and VOCs, and low for SOCs and microbial contaminants. The three spring sources rated as low for all contaminants because there are no potential sources and agricultural use is minimal in the watershed.

Final Susceptibility Ranking

A detection above a drinking water standard Maximum Contaminant Level (MCL), any detection of a VOC or SOC, or a detection of total coliform or fecal coliform bacteria will automatically give a high susceptibility rating to a well. This occurs despite the land use of the area because a pathway for contamination has been shown to exist. Total coliform bacteria was detected in the water sampling efforts of October 1993, April through June 1994 (12 detections), August and October 1995 (10 detections), and September 1998 (City Hall). In this case, both wells rate high for microbial contamination. In terms of total susceptibility rating, the Chantrelle Well rated moderate for all other types of contaminants and the Chestnut Well rated as moderate for all other contaminants as well. The 3 springs have overall ratings of moderate in all categories except microbial contaminants and VOCs.

Table 2. Summary of City of Bellevue Susceptibility Evaluation

Well	Susceptibility Scores									
	Hydrologic Sensitivity	Contaminant Inventory				System Construction	Final Susceptibility Ranking			
		IOC	VOC	SOC	Microbials		IOC	VOC	SOC	Microbials
Chantrelle	M	M	M	M	L	M	M	M	M	H*
Chestnut	M	M	M	L	L	M	M	M	M	H*
Spring #1	M	L	L	L	L	M	M	H*	M	H*
Spring #2	M	L	L	L	L	M	M	H*	M	H*
Spring #3	M	L	L	L	L	M	M	H*	M	H*

H = High Susceptibility, M = Moderate Susceptibility, Low Susceptibility

IOC = inorganic chemical, VOC = volatile organic chemical, SOC = synthetic organic chemical

H* = Indicates source automatically scored as high susceptibility due to presence of total coliform or fecal coliform or a detection of a VOC in the finished drinking water.

Susceptibility Summary

Total coliform or fecal coliform bacteria possibly threaten the City of Bellevue drinking water system. Many of the bacterial detections could be associated with the distribution system, but limited sampling information prevents a determination of whether the bacterial problem is confined exclusively to the distribution system.

The wells in the City of Bellevue system take water in part from the alluvial (river deposited) aquifer that comprises the valley floor. The valley floor averages about 2.4 kilometers in width (Anderson and Bideganeta, 1985). The depth of the valley fill in the area of Bellevue is approximately 200 feet below land surface. The groundwater and surface water systems are hydraulically connected and the hydraulic potential within the aquifer does not vary greatly. Recharge is primarily from precipitation, tributary valley underflow, and canal and stream seepage losses. Tests for nitrate, a primary indicator of contamination, showed concentrations well below the MCL of 10 mg/liter. Higher values were historically attributed to sewage disposal in the City of Bellevue (Luttrell and Brockway, 1984) before the installation of a municipal sewer system.

The three springs likely take water from consolidated rocks of the mountainous areas to the east of Bellevue. Extensive faulting and folding of these rocks resulting in a complex structure (Luttrell and Brockway, 1984). Without well logs, the water bearing unit of the springs remains undetermined, though likely the water comes from fractured zones.

Section 4. Options for Source Water Protection

The susceptibility assessment should be used as a basis for determining appropriate new protection measures or re-evaluating existing protection efforts. No matter what the susceptibility ranking a source receives, protection is always important. Whether the source is currently located in a “pristine” area or an area with numerous industrial and/or agricultural land uses that require education and surveillance, the way to ensure good water quality in the future is to act now to protect valuable water supply resources.

An effective source water protection program is tailored to the particular local source water protection area. A community with a fully developed source water protection program will incorporate many strategies. For City of Bellevue, source water protection activities should focus on identification and reduction of the local microbial threat, which could be from local septic systems or disposal ponds. Continued vigilance in keeping the wells protected from surface flooding can also keep the potential for contamination reduced. With the direct connection between the surface water and groundwater systems, any surface water discharges from the Big Wood River, Slaughterhouse Creek, or Seamans Creek should be adequately monitored. There is the potential for mine discharges affecting the local water wells. Local businesses that employ potentially harmful chemicals should be monitored as well. Agricultural activities, the highly permeable nature of the soils, and the movement rates of the water through the aquifer could make agricultural leaching a concern. The City of Bellevue should consider implementing practices aimed at reducing the leaching of agricultural chemicals from agricultural land within the delineated source water areas.

Much of the delineated areas are outside the direct jurisdiction of City of Bellevue. Partnerships with state and local agricultural agencies, county elected officials, and industry groups should be established and are critical to success. Due to the time involved with the movement of groundwater, wellhead protection activities should be aimed at long-term management strategies even though these strategies may not yield results in the near term. Source water protection activities for agriculture should be coordinated with the Idaho Department of Agriculture, the Soil Conservation Commission and local Soil Conservation District, and the Natural Resources Conservation Service. Source water protection activities for mining should be coordinated with the appropriate State and/or Federal agencies responsible for the regulation or cleanup of the mine. Depending on the nature and status of the mine, various agencies could include IDEQ, EPA, the Department of Lands, the Bureau of Land Management, the Forest Service, or others.)

Assistance

Public water supplies and others may call the following IDEQ offices with questions about this assessment and to request assistance with developing and implementing a local protection plan. In addition, draft protection plans may be submitted to the IDEQ office for preliminary review and comments.

Twin Falls Regional IDEQ Office (208) 736-2190

State IDEQ Office (208) 373-0502

Website: <http://www2.state.id.us/deq>

Water suppliers serving fewer than 10,000 persons may contact John Bokor, Idaho Rural Water Association, at (208) 743-6142 for assistance with wellhead protection strategies.

POTENTIAL CONTAMINANT INVENTORY

LIST OF ACRONYMS AND DEFINITIONS

AST (Aboveground Storage Tanks) – Sites with aboveground storage tanks.

Business Mailing List – This list contains potential contaminant sites identified through a yellow pages database search of standard industry codes (SIC).

CERCLIS – This includes sites considered for listing under the **Comprehensive Environmental Response Compensation and Liability Act (CERCLA)**. CERCLA, more commonly known as Superfund is designed to clean up hazardous waste sites that are on the national priority list (NPL).

Cyanide Site – DEQ permitted and known historical sites/facilities using cyanide.

Dairy – Sites included in the primary contaminant source inventory represent those facilities regulated by Idaho State Department of Agriculture (ISDA) and may range from a few head to several thousand head of milking cows.

Deep Injection Well – Injection wells regulated under the Idaho Department of Water Resources generally for the disposal of stormwater runoff or agricultural field drainage.

Enhanced Inventory – Enhanced inventory locations are potential contaminant source sites added by the water system. These can include new sites not captured during the primary contaminant inventory, or corrected locations for sites not properly located during the primary contaminant inventory. Enhanced inventory sites can also include miscellaneous sites added by the Idaho Department of Environmental Quality (IDEQ) during the primary contaminant inventory.

Floodplain – This is a coverage of the 100-year floodplains.

Group 1 Sites – These are sites that show elevated levels of contaminants and are not within the priority one areas.

Inorganic Priority Area – Priority one areas where greater than 25% of the wells/springs show constituents higher than primary standards or other health standards.

Landfill – Areas of open and closed municipal and non-municipal landfills.

LUST (Leaking Underground Storage Tank) – Potential contaminant source sites associated with leaking underground storage tanks as regulated under RCRA.

Mines and Quarries – Mines and quarries permitted through the Idaho Department of Lands.)

Nitrate Priority Area – Area where greater than 25% of wells/springs show nitrate values above 5mg/l.

NPDES (National Pollutant Discharge Elimination System) – Sites with NPDES permits. The Clean Water Act requires that any discharge of a pollutant to waters of the United States from a point source must be authorized by an NPDES permit.

Organic Priority Areas – These are any areas where greater than 25 % of wells/springs show levels greater than 1% of the primary standard or other health standards.

Recharge Point – This includes active, proposed, and possible recharge sites on the Snake River Plain.

RICRIS – Site regulated under **Resource Conservation Recovery Act (RCRA)**. RCRA is commonly associated with the cradle to grave management approach for generation, storage, and disposal of hazardous wastes.

SARA Tier II (Superfund Amendments and Reauthorization Act Tier II Facilities) – These sites store certain types and amounts of hazardous materials and must be identified under the Community Right to Know Act.

Toxic Release Inventory (TRI) – The toxic release inventory list was developed as part of the Emergency Planning and Community Right to Know (Community Right to Know) Act passed in 1986. The Community Right to Know Act requires the reporting of any release of a chemical found on the TRI list.

UST (Underground Storage Tank) – Potential contaminant source sites associated with underground storage tanks regulated as regulated under RCRA.

Wastewater Land Applications Sites – These are areas where the land application of municipal or industrial wastewater is permitted by IDEQ.

Wellheads – These are drinking water well locations regulated under the Safe Drinking Water Act. They are not treated as potential contaminant sources.

NOTE: Many of the potential contaminant sources were located using a geocoding program where mailing addresses are used to locate a facility. Field verification of potential contaminant sources is an important element of an enhanced inventory.

Where possible, a list of potential contaminant sites unable to be located with geocoding will be provided to water systems to determine if the potential contaminant sources are located within the source water assessment area.

References Cited

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Attachment A

City of Bellevue
Susceptibility Analysis
Worksheet

The final scores for the susceptibility analysis were determined using the following formulas:

- 1) VOC/SOC/IOC Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.2)
- 2) 2) Microbial Final Score = Hydrologic Sensitivity + System Construction + (Potential Contaminant/Land Use x 0.35)

Final Susceptibility Scoring:

0 - 5 Low Susceptibility

6 - 12 Moderate Susceptibility

≥ 13 High Susceptibility

Ground Water Susceptibility Report

Public Water System Name :

Public Water System Number 5070004

BELLEVUE CITY OF

Well# : CHANTRELLE WELL

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1. System Construction		SCORE			
Drill Date	12/01/1995				
Driller Log Available	YES				
Sanitary Survey (if yes, indicate date of last survey)	YES	1997			
Well meets IDWR construction standards	NO	1			
Wellhead and surface seal maintained	YES	0			
Casing and annular seal extend to low permeability unit	YES	0			
Highest production 100 feet below static water level	YES	0			
Well located outside the 100 year flood plain	NO	1			
Total System Construction Score		2			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	NO	2			
Vadose zone composed of gravel, fractured rock or unknown	YES	1			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	YES	0			
Total Hydrologic Score		4			
3. Potential Contaminant / Land Use - ZONE 1A		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	IRRIGATED CROPLAND	2	2	2	2
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	YES	NO	NO	NO	YES
Total Potential Contaminant Source/Land Use Score - Zone 1A		2	2	2	2
Potential Contaminant / Land Use - ZONE 1B					
Contaminant sources present (Number of Sources)	YES	4	5	4	1
(Score = # Sources X 2) 8 Points Maximum		8	8	8	2
Sources of Class II or III leacheable contaminants or	NO	0	0	0	
4 Points Maximum		0	0	0	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone 1B		8	8	8	2
Potential Contaminant / Land Use - ZONE II					
Contaminant Sources Present	YES	2	2	2	
Sources of Class II or III leacheable contaminants or	YES	1	0	0	
Land Use Zone II	25 to 50% Irrigated Agricultural Land	1	1	1	
Potential Contaminant Source / Land Use Score - Zone II		4	3	3	0
Potential Contaminant / Land Use - ZONE III					
Contaminant Source Present	YES	1	1	1	
Sources of Class II or III leacheable contaminants or	YES	1	0	0	
Is there irrigated agricultural lands that occupy > 50% of	YES	1	1	1	
Total Potential Contaminant Source / Land Use Score - Zone III		3	2	2	0
Cumulative Potential Contaminant / Land Use Score		17	15	15	4
4. Final Susceptibility Source Score		9	9	9	8
5. Final Well Ranking		Moderate	Moderate	Moderate	Moderate

Ground Water Susceptibility Report

Public Water System Name :

Public Water System Number

BELLEVUE CITY OF
5070004

Well# : WELL

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1. System Construction		SCORE			
Drill Date	NO				
Driller Log Available	YES	1997			
Sanitary Survey (if yes, indicate date of last survey)	NO	1			
Well meets IDWR construction standards	YES	0			
Wellhead and surface seal maintained	NO	2			
Casing and annular seal extend to low permeability unit	NO	1			
Highest production 100 feet below static water level	YES	0			
Well located outside the 100 year flood plain					
Total System Construction Score		4			
2. Hydrologic Sensitivity					
Soils are poorly to moderately drained	YES	0			
Vadose zone composed of gravel, fractured rock or unknown	YES	1			
Depth to first water > 300 feet	NO	1			
Aquitard present with > 50 feet cumulative thickness	NO	2			
Total Hydrologic Score		4			
3. Potential Contaminant / Land Use - ZONE 1A		IOC Score	VOC Score	SOC Score	Microbial Score
Land Use Zone 1A	IRRIGATED CROPLAND	2	2	2	2
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	YES	NO	NO	NO	YES
Total Potential Contaminant Source/Land Use Score - Zone 1A		2	2	2	2
Potential Contaminant / Land Use - ZONE 1B					
Contaminant sources present (Number of Sources)	YES	4	5	4	2
(Score = # Sources X 2) 8 Points Maximum		8	8	8	4
Sources of Class II or III leacheable contaminants or	NO	0	0	0	
4 Points Maximum		0	0	0	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone 1B		8	8	8	4
Potential Contaminant / Land Use - ZONE II					
Contaminant Sources Present	YES	2	2	2	
Sources of Class II or III leacheable contaminants or	YES	1	0	0	
Land Use Zone II	25 to 50% Irrigated Agricultural Land	1	1	1	
Potential Contaminant Source / Land Use Score - Zone II		4	3	3	0
Potential Contaminant / Land Use - ZONE III					
Contaminant Source Present	YES	1	1	1	
Sources of Class II or III leacheable contaminants or	YES	1	0	0	
Is there irrigated agricultural lands that occupy > 50% of	YES	1	1	1	
Total Potential Contaminant Source / Land Use Score - Zone III		3	2	2	0
Cumulative Potential Contaminant / Land Use Score		17	15	15	6
4. Final Susceptibility Source Score		11	11	11	10

Ground Water Susceptibility Report

Public Water System Name :

BELLEVUE CITY OF

Well# : SPRING #1 UPPER

Public Water System Number 5070004

10/05/2000 12:31:54 PM

1. System Construction

SCORE

Drill Date		
Driller Log Available	NO	
Sanitary Survey (if yes, indicate date of last survey)	YES	1997
Well meets IDWR construction standards	NO	1
Wellhead and surface seal maintained	YES	0
Casing and annular seal extend to low permeability unit	NO	2
Highest production 100 feet below static water level	NO	1
Well located outside the 100 year flood plain	YES	0

Total System Construction Score 4

2. Hydrologic Sensitivity

Soils are poorly to moderately drained	YES	0
Vadose zone composed of gravel, fractured rock or unknown	YES	1
Depth to first water > 300 feet	NO	1
Aquitard present with > 50 feet cumulative thickness	NO	2

Total Hydrologic Score 4

3. Potential Contaminant / Land Use - ZONE 1A

IOC Score VOC Score SOC Score Microbial Score

Land Use Zone 1A	RANGELAND, WOODLAND, BASALT	0	0	0	0
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	YES	NO	YES	NO	YES
Total Potential Contaminant Source/Land Use Score - Zone 1A		0	0	0	0

Potential Contaminant / Land Use - ZONE 1B

Contaminant sources present (Number of Sources)	NO	0	0	0	0
(Score = # Sources X 2) 8 Points Maximum		0	0	0	0
Sources of Class II or III leacheable contaminants or	NO	0	0	0	
4 Points Maximum		0	0	0	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0

Total Potential Contaminant Source / Land Use Score - Zone 1B 0 0 0 0

Potential Contaminant / Land Use - ZONE II

Contaminant Sources Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or	NO	0	0	0	
Land Use Zone II	Less than 25% Agricultural Land	0	0	0	

Potential Contaminant Source / Land Use Score - Zone II 0 0 0 0

Potential Contaminant / Land Use - ZONE III

Contaminant Source Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or	NO	0	0	0	
Is there irrigated agricultural lands that occupy > 50% of	NO	0	0	0	

Total Potential Contaminant Source / Land Use Score - Zone III 0 0 0 0

Cumulative Potential Contaminant / Land Use Score

0 0 0 0

4. Final Susceptibility Source Score

8 8 8 8

5. Final Well Ranking

Moderate Moderate Moderate Moderate

Ground Water Susceptibility Report

Public Water System Name :

BELLEVUE CITY OF
5070004

Well# : SPRING #2 MDLE

10/05/2000 12:32:10 PM

1. System Construction

SCORE

Drill Date	NO	
Driller Log Available	YES	1997
Sanitary Survey (if yes, indicate date of last survey)	NO	1
Well meets IDWR construction standards	YES	0
Wellhead and surface seal maintained	NO	2
Casing and annular seal extend to low permeability unit	NO	1
Highest production 100 feet below static water level	YES	0
Well located outside the 100 year flood plain		

Total System Construction Score 4

2. Hydrologic Sensitivity

Soils are poorly to moderately drained	YES	0
Vadose zone composed of gravel, fractured rock or unknown	YES	1
Depth to first water > 300 feet	NO	1
Aquitard present with > 50 feet cumulative thickness	NO	2

Total Hydrologic Score 4

3. Potential Contaminant / Land Use - ZONE 1A

IOC Score VOC Score SOC Score Microbial Score

Land Use Zone 1A	RANGELAND, WOODLAND, BASALT	0	0	0	0
Farm chemical use high	NO	0	0	0	
IOC, VOC, SOC, or Microbial sources in Zone 1A	YES	NO	YES	NO	YES
Total Potential Contaminant Source/Land Use Score - Zone 1A		0	0	0	0

Potential Contaminant / Land Use - ZONE 1B

Contaminant sources present (Number of Sources)	NO	0	0	0	0
(Score = # Sources X 2) 8 Points Maximum		0	0	0	0
Sources of Class II or III leacheable contaminants or	NO	0	0	0	
4 Points Maximum		0	0	0	
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0	0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0	0

Total Potential Contaminant Source / Land Use Score - Zone 1B 0 0 0 0

Potential Contaminant / Land Use - ZONE II

Contaminant Sources Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or	NO	0	0	0	
Land Use Zone II	Less than 25% Agricultural Land	0	0	0	

Potential Contaminant Source / Land Use Score - Zone II 0 0 0 0

Potential Contaminant / Land Use - ZONE III

Contaminant Source Present	NO	0	0	0	
Sources of Class II or III leacheable contaminants or	NO	0	0	0	
Is there irrigated agricultural lands that occupy > 50% of	NO	0	0	0	

Total Potential Contaminant Source / Land Use Score - Zone III 0 0 0 0

Cumulative Potential Contaminant / Land Use Score 0 0 0 0

4. Final Susceptibility Source Score	8	8	8	8
5. Final Well Ranking	Moderate	Moderate	Moderate	Moderate

Ground Water Susceptibility Report Public Water System Name : Well# : SPRING #3 LOWER
Public Water System Number 5070004 10/05/2000 12:32:25 PM

1. System Construction	SCORE			
Drill Date				
Driller Log Available	NO			
Sanitary Survey (if yes, indicate date of last survey)	YES	1997		
Well meets IDWR construction standards	NO	1		
Wellhead and surface seal maintained	YES	0		
Casing and annular seal extend to low permeability unit	NO	2		
Highest production 100 feet below static water level	NO	1		
Well located outside the 100 year flood plain	YES	0		
Total System Construction Score		4		
2. Hydrologic Sensitivity				
Soils are poorly to moderately drained	YES	0		
Vadose zone composed of gravel, fractured rock or unknown	YES	1		
Depth to first water > 300 feet	NO	1		
Aquitard present with > 50 feet cumulative thickness	NO	2		
Total Hydrologic Score		4		
3. Potential Contaminant / Land Use - ZONE 1A		IOC Score	VOC Score	SOC Score Microbial Score
Land Use Zone 1A	RANGELAND, WOODLAND, BASALT	0	0	0 0
Farm chemical use high	NO	0	0	0
IOC, VOC, SOC, or Microbial sources in Zone 1A	YES	NO	YES	NO YES
Total Potential Contaminant Source/Land Use Score - Zone 1A		0	0	0 0
Potential Contaminant / Land Use - ZONE 1B				
Contaminant sources present (Number of Sources)	NO	0	0	0 0
(Score = # Sources X 2) 8 Points Maximum		0	0	0 0
Sources of Class II or III leacheable contaminants or	NO	0	0	0
4 Points Maximum		0	0	0
Zone 1B contains or intercepts a Group 1 Area	NO	0	0	0 0
Land use Zone 1B	Less Than 25% Agricultural Land	0	0	0 0
Total Potential Contaminant Source / Land Use Score - Zone 1B		0	0	0 0
Potential Contaminant / Land Use - ZONE II				
Contaminant Sources Present	NO	0	0	0
Sources of Class II or III leacheable contaminants or	NO	0	0	0
Land Use Zone II	Less than 25% Agricultural Land	0	0	0
Potential Contaminant Source / Land Use Score - Zone II		0	0	0 0
Potential Contaminant / Land Use - ZONE III				
Contaminant Source Present	NO	0	0	0
Sources of Class II or III leacheable contaminants or	NO	0	0	0
Is there irrigated agricultural lands that occupy > 50% of	NO	0	0	0
Total Potential Contaminant Source / Land Use Score - Zone III		0	0	0 0

Cumulative Potential Contaminant / Land Use Score	0	0	0	0
4. Final Susceptibility Source Score	8	8	8	8
5. Final Well Ranking	Moderate	Moderate	Moderate	Moderate